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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/987,262  | 11/14/2001  | Miho Hatanaka        | 216092US0           | 6841             |
| 22850   | 7590        | 04/15/2004           | EXAMINER            |                  |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                      | LANGEL, WAYNE A     |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 1754                |                  |
| DATE MAILED: 04/15/2004   |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.



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| SERIAL NUMBER | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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| EXAMINER |
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DATE MAILED:

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on 1-22-04 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s),        days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892.        | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.             | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152.       |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____   |

**Part II SUMMARY OF ACTION**

1. ☒ Claims 17-44 are pending in the application.  
Of the above, claims 17-25 are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 26-44 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

Applicant's traverse of the restriction requirement has been considered, but is not deemed persuasive. Applicant's argument, that it is clear that the Examiner would only have to consider two subclasses in order to complete a search of all the claims in the case, is not convincing, since about five subclasses in each of Classes 423 and 502 would have to be searched for a complete search of all the claims. Applicant's argument, that the extent of such a search would not seem to impose an undue search burden upon the Examiner and therefore a complete search of relevant prior art for all of the claims is requested, is not convincing, since there is more involved in examining a patent application besides searching, such as evaluating applicant's arguments and formulating rejections. Applicant's argument, that the Examiner has not shown how the process embodiments of claims 17-25 would result in a mixed oxide material other than the product of the present invention, is not convincing, since it is clear that the process recited in claim 17 would not necessarily contain cerium oxide and an oxide of aluminum, titanium or silicon, let alone an oxide wherein the cerium oxide would constitute more than 50% by weight of the composite oxide powder. Accordingly the restriction requirement is made FINAL.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under

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this section made in this Office action:

A person shall be entitled to a patent unless --  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 26-44 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over either Suzuki et al. '288 or Rajaram et al. '762. No distinction is seen between the composite metal oxide powders disclosed by Suzuki et al. '288 and Rajaram et al. '762, and that recited in applicant's claims. Applicant's argument, that there is no teaching or suggestion in Suzuki et al. '288 of the pore size range within the meso pore size range of 3.5 to 100 nanometers in diameter, as volume is influenced by the time and temperature of calcination conditions, is not convincing. Claims

32 and 44 do not require that the composite oxide powder actually be calcined, but merely recite a composite oxide powder which would have the recited porosity after calcination, if one were to calcine the composite oxide powder. It is clear from column 3, line 61 - column 4, line 52 of Suzuki et al. '288 that the composite oxide powder is prepared by coprecipitation, which is the same method used in forming applicant's composite oxide powder. Accordingly the composite oxide powder produced according to the process of Suzuki et al. '288 would inherently have the porosity as recited in applicant's claims 32 and 44, if calcined at the respective times and temperatures as recited in those claims. In any event, Suzuki et al. '288 teaches at column 10, lines 15-18 that the catalyst was subjected to a model endurance test in a stream of air at 1000°C for 5 hours. Such endurance test would constitute a "calcination", and the resulting composite oxide powder would inherently have the porosity recited in applicant's claims 32 and 44, since the powder is made by a process identical to that disclosed in applicant's specification. Regarding Rajaram et al. '762, applicant's argument, that there is no teaching or suggestion of specific calcination conditions as to temperature and time required to develop pores in the composite oxide product having a porosity such that the pores in the meso pore size range of 3.5

to 100 nanometers in diameter has the volume as recited in applicant's claims 32 and 44. It is clear from column 4, line 27 - column 6, line 44 that the composite oxide of Rajaram et al. '762 is prepared by coprecipitation, which is the same process employed by applicant to produce the composite oxide. Accordingly the properties of the composite oxide of Rajaram et al. '762 would inherently have the porosity as recited in applicant's claims 32 and 44, since the composite oxide is made by an identical process, and applicant's claims do not require that the composite oxide powder actually be calcined at a temperature of 600°C or 800°C, but merely recite the porosity which would be attained if calcined at the recited times and temperatures. In any event, Rajaram et al. '762 teaches at column 5, lines 3-5 that the coprecipitated product may be calcined in air at 900°C. Accordingly the composite oxide of Rajaram et al. '762 would inherently have the porosity as recited in applicant's claims 32 and 44, since the powder is made by coprecipitation followed by calcination at a temperature of 600 to 800°C.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne A. Langel whose telephone number is (571) 272-1353. The examiner can normally be reached on Monday through Friday from 8 A.M. to

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3:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on (571) 272-1358. The fax phone number for this Group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or public PAIR. Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WAL:cdc

April 13, 2004

*Wayne A. Langel*  
WAYNE A. LANGEL  
PRIMARY EXAMINER